

CLAIMS

What is claimed is:

1. A method of supporting voice-band modem-to-modem calls in a wireless communication system, the method comprising:
  - detecting a call from a first modem to a second modem, the modem call comprising data;
  - terminating the modem call;
  - demodulating the data in the terminated modem call; and
  - relaying the demodulated data from a near end of a wireless broadband channel to a far end of the wireless broadband channel.
2. The method of claim 1 further comprising:
  - determining a data transfer rate of the modem call;
  - passing the modem call through a voice coder when the data transfer rate of the modem call is less than or equal to a threshold rate; and
  - sending the low-rate modem call through a dedicated wireless voice channel.
3. The method of claim 2, wherein the dedicated wireless voice channel is circuit-switched.
4. The method of claim 1 further comprising:
  - modulating the relayed data at the far end of the wireless broadband channel;
  - establishing a connection between the far end of the wireless broadband channel and the second modem; and
  - sending the modulated data to the second modem via the connection.
5. The method of claim 4 wherein the connection between the far end of the wireless broadband channel and the second modem is established when the far end of the wireless broadband channel places a modem call to the second modem.
6. The method of claim 1 wherein the wireless broadband channel is not used for voice calls.
7. The method of claim 1 wherein the wireless broadband channel is packet switched.

8. The method of claim 1 wherein data from multiple modem calls may be relayed over the wireless broadband channel at the same time.
9. The method of claim 1 wherein the first modem is a V.90/V.34 client or server modem.
10. The method of claim 1 wherein the second modem is a V.90/V.34 client or server modem.
11. The method of claim 1 wherein the wireless communication system is a non-line-of-sight system.
12. The method of claim 1 wherein the wireless communication system uses Orthogonal Frequency Division Multiplexing.
13. The method of claim 1 wherein terminating the modem call comprises answering the modem call.
14. The method of claim 1 wherein the call from the first modem to the second modem is detected by a tone detector.
15. The method of claim 1 wherein the near end of the wireless broadband channel comprises a subscriber unit or a base station.
16. The method of claim 1 wherein the far end of the wireless broadband channel comprises a subscriber unit or a base station.
17. The method of claim 1 further comprising:
  - determining a data transfer rate of the modem call; and
  - relaying the demodulated data from a near end of a dedicated wireless voice channel to a far end of the dedicated wireless voice channel when the data transfer rate of the modem call is less than or equal to a bandwidth of the dedicated wireless voice channel.
18. The method of claim 17, wherein the dedicated wireless voice channel is circuit-switched.
19. The method of claim 17, wherein the bandwidth of the dedicated wireless voice channel is the data throughput supported by the dedicated wireless voice channel.
20. The method of claim 1, wherein the first modem is at the near end of the wireless broadband channel and the second modem is at the far end of the wireless broadband channel.

21. The method of claim 1, wherein the data in the terminated call is demodulated at the near end of the wireless broadband channel.
22. A wireless communication system comprising:
- one or more wireless voice channels, the one or more wireless voice channels comprising a near end and a far end;
  - one or more wireless broadband channels, the one or more wireless broadband channels comprising the same near end and the same far end as the one or more wireless voice channels;
  - a first modem, the first modem being linked to the near end of the one or more wireless voice and broadband channels; and
  - a second modem, the second modem being linked to the far end of the one or more wireless voice and broadband channels, wherein the wireless communication system is configured to:
    - detect a call from the first modem to the second modem, the modem call comprising data;
    - terminate the modem call;
    - demodulate the data in the terminated modem call; and
    - relay the demodulated data from the near end of at least one of the one or more wireless broadband channels to the far end of the at least one wireless broadband channel.
23. The system of claim 22 wherein the wireless communication system is further configured to:
- modulate the relayed data at the far end of the at least one wireless broadband channel;
  - establish a connection between the far end of the at least one wireless broadband channel and the second modem; and
  - send the modulated data to the second modem via the connection.
24. The system of claim 23 wherein the connection between the far end of the at least one wireless broadband channel and the second modem is established when the far end of the at least one wireless broadband channel places a modem call to the second modem.

25. The system of claim 22 wherein the wireless communication system is further configured to:
- determine a data transfer rate of the modem call;
  - pass the modem call through a voice coder when the data transfer rate of the modem call is less than or equal to a threshold rate; and
  - send the low-rate modem call through one of the one or more wireless voice channels.
26. The system of claim 25 wherein the wireless voice channel is dedicated to the low-rate modem call.
27. The system of claim 22 wherein the one or more wireless broadband channels are not used for voice calls.
28. The system of claim 22 wherein the one or more wireless broadband channels are packet switched.
29. The system of claim 22 wherein the one or more wireless voice channels are circuit-switched.
30. The system of claim 22 wherein data from multiple modem calls may be relayed over one of the one or more wireless broadband channels at the same time.
31. The system of claim 22 wherein the first modem is a V.90/V.34 client or server modem.
32. The system of claim 22 wherein the second modem is a V.90/V.34 client or server modem.
33. The system of claim 22 wherein the wireless communication system is a non-line-of-sight system.
34. The system of claim 22 wherein the wireless communication system uses Orthogonal Frequency Division Multiplexing.
35. The system of claim 22 wherein the modem call is terminated by answering the call from the first modem.
36. The system of claim 22 wherein the call from the first modem to the second modem is detected by a tone detector.

37. The system of claim 22 wherein the near end of the one or more wireless voice and broadband channels comprises a subscriber unit or a base station.
38. The system of claim 22 wherein the far end of the one or more wireless voice and broadband channels comprises a subscriber unit or a base station.
39. The system of claim 22 wherein the wireless communication system is further configured to:
- determine a data transfer rate of the modem call; and
  - relay the demodulated data from the near end of one of the one or more wireless voice channels to the far end of the wireless voice channel when the data transfer rate of the modem call is less than or equal to a bandwidth of the one or more wireless voice channels.
40. The system of claim 39 wherein the wireless voice channel is dedicated to the low-rate modem call.
41. The system of claim 39, wherein the bandwidth of the wireless voice channel is the data throughput supported by the wireless voice channel.
42. The system of claim 22, wherein the data in the terminated call is demodulated at the near end of the wireless broadband channel.